

**Alternative 2  
Option A**

**Bunker Hill  
Acid Mine Drainage  
Disposal of Raw Sludge in CIA Disposal Beds  
Order of Magnitude Cost Opinion**

DATE: 11/22/2000  
PROJECT NO.: 152215.FS.02  
ESTIMATE BY: D. Bunte  
N. Gulensoy

DESCRIPTION	QTY	UNIT	TOTAL UNIT COST	TOTAL COST
Subgrade Stabilization	10,500	C. Y.	4.00	\$42,000
Liner Protection Sand	8250	C. Y.	10.00	\$82,500
Drain Rock	1,950	C. Y.	18.00	\$35,100
Ditch Lining Geotextile	21,200	S. Y.	1.65	\$34,980
G C L	18,100	S. Y.	4.05	\$73,305
H D P E Geomembrane	18,100	S. Y.	5.40	\$97,740
H D P E Pipe, 10"	550	L. F.	23.00	\$12,650
Erosion Control Matting	11800	S. Y.	1.50	\$17,700
Perf Pipe, 4"	2000	L. F.	2.00	\$4,000
Perf Pipe, 6"	580	L. F.	3.00	\$1,740
HDPE Pipe, 6"	130	L. F.	2.50	\$325
Strip Drains	700	L. F.	1.75	\$1,225
Valves, 6" Knife Gate	2	Each	700.00	\$1,400
Valves, 10" Knife Gate	6	Each	1,000.00	\$6,000
Air/Vacuum Release Valve	1	Each	2,000.00	\$2,000
Valve Vault	6	Each	1,950.00	\$11,700
Water Tight Manhole	1	Each	3,500.00	\$3,500
Vertical Filtrate Drains	6	Each	4,000.00	\$24,000
Cleanouts	2	Each	750.00	\$1,500
Perimeter Road Embankment (not reduced)	28275	C. Y.	10	\$282,750
Chain Link Fence and Gates (not reduced)	1000	L.F.	12	\$12,000
Crushed Rock Surfacing (not reduced)	1500	C. Y.	15	\$22,500
<b>SUBTOTAL</b>				<b>\$1,024,865</b>
<b>MISC ALLOWANCE</b>	<b>10%</b>			<b>\$102,487</b>
<b>SUBTOTAL</b>				<b>\$1,127,352</b>
<b>CONTINGENCY</b>	<b>30%</b>			<b>\$338,205</b>
<b>SUBTOTAL</b>				<b>\$1,465,557</b>
<b>MOBILIZATION</b>	<b>15%</b>			<b>\$219,834</b>
<b>CONSTRUCTION TOTAL</b>				<b>\$1,685,390</b>
<b>SALES TAX ON MATERIALS</b>	<b>5.0%</b>			<b>\$25,622</b>
<b>ENGINEERING AND SUPPORT</b>	<b>20%</b>			<b>\$337,078</b>
<b>CONSTRUCTION MANAGEMENT</b>	<b>8%</b>			<b>\$134,831</b>

**CAPITAL COST SUBSEQUENT BEDS TOTAL (ROUNDED) \$2,180,000**

**ANNUAL O&M COST FOR OPERATING BED \$46,000**

**NPV OF ANNUAL O&M COSTS (30 YEARS @ 7% INTEREST) \$566,000**

**NPV OF INITIAL AND SUBSEQUENT BEDS & CLOSURES CAPITAL COSTS @ 7% INTEREST \$6,859,000**

**TOTAL 30-YEAR PRESENT WORTH COST @ 7% INTEREST \$7,425,000**

**NOTES:**

Misc Allowance markup is to include items known to exist but cannot be quantified at this time.  
Contingency is for scope changes that are presently unforeseen.  
Mobilization includes bonds, insurance, temporary facilities, health & safety, demobilization, etc.

**NOTE:** The above cost opinion is in November 2000 dollars and does not include escalation.  
The order of magnitude cost opinion shown has been prepared for guidance in project evaluation at the time of preparation. The final costs of the project will depend on actual labor and material costs, actual site conditions, productivity, competitive market conditions, final project scope, final schedule and other variable factors. As a result, the final project costs will vary from those presented above. Because of these factors, funding needs must be carefully reviewed prior to making specific financial decisions or establishing final budgets.